

**Departmental BPC Plan  
Computer Science  
Rochester Institute of Technology**



**Effective dates of Plan:** 09/06/2022- 09/06/2024

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### **1. Context**

Rochester Institute of Technology (RIT) is a large private institution attracting students mainly from upstate New York, but also from the rest of the nation. The undergraduate CS program is a 5-year program including one year of mandatory co-op. The department is housed within the Golisano College of Computing and Information Sciences, along with four other computing departments. The undergraduate female-identified population in CS has increased from 15% to 18% in the last four years, compared to 34% for the university as a whole, while our AALANA population (African-Americans, Latino Americans, and Native Americans) has increased from 12% to 13%, compared to 16% across the university. The employment rate of CS graduates is approximately 99%. RIT is located in Rochester, New York, in which the demographics of the city proper are much different from that of the surrounding area. The Rochester City School District has 10% of students identifying as Caucasian, and also 91% economically disadvantaged students, whereas the suburban districts have 65-90% Caucasian students. RIT is also home to the National Technical Institute for the Deaf (NTID), and the CS program has approximately 25 Deaf or hard-of-hearing students enrolled at any given time.

### **2. Goals**

G1: Increase percent of female-identified students to 25% and that of AALANA students to 20% by 2026.

G2: Improve 3-year retention rate of female students from 85% to 95%, and that of AALANA students from 68 % to 90%, by 2026.

G3: Improve 3-year retention rate of, and increase opportunities for, Deaf and hard-of-hearing students.

### **3. Activities and Measurement**

Data Collection - which is used to measure and improve activities below

- A1: Survey of students at the time of their mid-degree audit to understand the challenges and the needs of women and AALANA students. Students meet with their academic advisor in their third year (out of five) of study, and we can use this checkpoint more rigorously to determine factors impacting their decision to continue their studies or not. (lead: Kwon)
- A2: We will continue to participate in the Data Buddies survey and incorporate this data with the mid-degree survey data. (lead: Kwon)
- A3: We will create an inventory of all past and ongoing K-12 outreach activities in the department and the college. (lead: Kwon)

#### **K-12 Outreach (G1)**

- A4. *Imagine RIT* attracts thousands of K-12 students and their parents, including a larger percentage of women and AALANA students than the CS program. In particular, K-12 students of all backgrounds are attracted to such exhibits as '*mazes for computing thinking*' and '*computer petting zoo*' hosted by CS faculty. We will create common signage across CS exhibits to attract these students and organize one-on-one conversations between faculty, RIT students, and local K-12 students to talk about the possibilities of a CS career. (lead: Butler)

- A5. BPC outreach programs that utilize current students as mentors/role models. These outreach activities will involve bringing students and their teachers from local schools to campus for activities, demos, mini-courses, etc. We will initially target the Wilson Magnet HS in the Rochester School District, which serves a majority of AALANA students. Faculty can participate by designing the lessons or demos, with students leading them. Projects that have been developed for Imagine RIT, College & Careers, Open houses, or other programs can serve as a starting point. (lead: Butler)
- A6. Teacher training for teachers in the Rochester City School District to develop expertise in computing and specific areas of interest that may appeal to more students, such as robotics, app development, IoT. (lead: Rivero/Kumar)

Metrics: Number and percentage of applicants, acceptances, enrollments, and scholarship recipients for women and AALANA students from the Rochester area over the five-year period; number and demographics of CS faculty, CS students, school teachers, and K-12 students participating in outreach activities over the five year period.

#### Student Community and Support (G2, G3)

- A7. Continuing collaboration with Women in Computing (WiC) in such activities as Girls who Code, WiCHacks, and prospective student overnights. The Golisano College with support from industry and alumni, houses this program. Several CS faculty and students are actively engaged with WiC. K-12 students from the Rochester School District will be exposed to WiC activities. (lead: Polak)
- A8. Peer mentor program will pair second-year students, focusing on women and AALANA students, with mentors that have been in co-op/s (current upper-class students, PhD students or recent alumni). These mentors can motivate the younger students with discussion of career options (industry and research), support the job search process, and can help them find the available resources on campus. In addition, results of the mid-degree survey will be used to suggest topics for mentors to discuss with their mentees. (lead: Burt)
- A9. Provide support and institutional opportunity to students of diverse backgrounds, including women, AALANA students, and first-generation college students by creating REU programs and other research opportunities for students from underrepresented groups; developing a “How to succeed in CS@RIT” app or similar platform; and encouraging faculty to learn ASL with a goal to extend the support network for NTID students (lead: Burt)

Metrics: Ratings of self-confidence, community and belonging from the Data Buddies survey and from our mid-degree survey across demographic groups; number of students from underrepresented groups engaged in research.

#### Curriculum Revision (G2, G3)

- A10. Redevelopment of the introductory CS sequence for students with different experience levels and backgrounds. The department has recently embarked on a study of incoming students’ background and how it relates to their success in the introductory courses. This will be used to ensure that the introductory courses are welcoming to all students, including the potential development of a new CS0 course. (lead: Butler)

Metrics: One-year and three-year retention and graduation rates for women, AALANA, and deaf and hard-of-hearing students.